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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/743,002	11/01/1996	HERBERT DAMSOHN	027/43042	3122

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EXAMINER

LEO, LEONARD R

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/743,002

Applicant(s)

DAMSOHN ET AL.

Examiner

Leonard R. Leo

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22, 31 and 38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22, 31 and 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 23, 2004 has been entered.

Claims 22, 31 and 38 are pending.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 22, 31 and 38 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2 of U.S. Patent No. 6,321,835 in view of Kim, and further in view of Brzezinski or Scala.

The patent claims a plurality of rectangular tubes formed by half shells for exhaust gas flow; a plurality of internal V-shaped lugs arranged in pairs; a jacket (i.e. sheet metal, column 3) provided with a coolant inlet and outlet; but does not claim latticed tube bottoms and directly attaching the lugs.

Kim (Figures 2-3) discloses a tube and shell heat exchanger comprising a plurality of tubes 1 welded to preformed latticed tube bottoms 2 for the purpose of providing a strong fluid tight manifold.

Brzezinski discloses a heat exchanger comprising a tube 1 having opposed walls 8, 9 and a turbulating insert 5 with lugs 15 thereon; wherein the prior art welded the lugs directly to the tube walls (column 1, lines 57-64) for the purpose of minimizing material and weight of the heat exchanger.

Scala discloses a heat exchanger comprising a tube 10 having opposed walls 20, 24 and turbulating lugs 25-27 welded thereon for the purpose of minimizing material and weight of the heat exchanger.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in the patent welded latticed tube bottoms for the purpose of providing strong fluid tight manifolds as recognized by Kim, *and* welded lugs for the purpose of minimizing material and weight of the heat exchanger as recognized by Brzezinski or Scala.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3753

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22, 31 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karbach et al in view of Brzezinski and Kim.

Karch et al discloses all the claimed limitations except lugs directly attached to the tube walls and latticed tube bottoms.

Brzezinski discloses a heat exchanger comprising a tube 1 having opposed walls 8, 9 and a turbulating insert 5 with lugs 15 thereon; wherein the prior art welded the lugs directly to the tube walls (column 1, lines 57-64) for the purpose of minimizing material and weight of the heat exchanger.

Kim discloses a tube and shell heat exchanger comprising a plurality of tubes 1 welded to preformed latticed tube bottom 2 for the purpose of providing a strong fluid tight manifold.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Karbach et al welded lugs for the purpose of minimizing material and weight of the heat exchanger as recognized by Brzezinski, *and* latticed tube bottoms receiving a plurality of tubes for the purpose of providing a fluid tight manifold as recognized by Kim. In the combination, Karbach et al discloses insert 12 (Figure 1a and 2-3) providing upper and lower lugs 21, 22 on opposite tube walls 13. The modification as taught by Brzezinski would "directly attach" the lugs on opposite tube wall, in order to not to destroy the primary reference of Karbach et al.

Claims 22, 31 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karbach et al in view of Scala and Kim.

Karchach et al discloses all the claimed limitations except lugs directly attached to the tube walls and latticed tube bottoms.

Scala discloses a heat exchanger comprising a tube 10 having opposed walls 20, 24 and turbulating lugs 25-27 welded thereon for the purpose of minimizing material and weight of the heat exchanger.

Kim discloses a tube and shell heat exchanger comprising a plurality of tubes 1 having spacing elements 3 and welded to preformed latticed tube bottom 2 for the purpose of providing a strong fluid tight manifold.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Karbach et al welded lugs for the purpose of minimizing material and weight of the heat exchanger as recognized by Scala, *and* latticed tube bottoms receiving a plurality of tubes for the purpose of providing a fluid tight manifold as recognized by Kim. In the combination, Karbach et al discloses insert 12 (Figure 1a and 2-3) providing upper and lower lugs 21, 22 on opposite tube walls 13. The modification as taught by Scala would directly attach the lugs on opposite tube wall, in order to not to destroy the primary reference of Karbach et al.

Response to Arguments

Applicant's arguments have been fully considered but they are not persuasive.

The obvious double patenting rejection is maintained. Although the Damsohn et al patent claims a device, the method claims of the instant application are believed met. The instant method claims merely recite generalized method steps, such as:

- providing a plurality of tube halves;
- arranging a plurality of lugs on said tube halves in pairs by directly attaching;
- joining pairs of said tube halves together to form rectangular tubes;
- providing first and second latticed tube bottoms;
- welding ends of said rectangular tube to said latticed tube bottoms;
- attaching a sheet metal jacket provided with a coolant inlet and outlet; and
- attaching connections to said tube bottoms, to ends of said sheet metal jacket, or to both.

The claims of the Damsohn et al patent recite:

- rectangular tubes comprising two U-shaped half shells, each having bottoms with lugs arranged in pairs and diverge in the flow direction in a V-shape, *wherein the half shells are provided, pairs of lugs are arranged thereon, and rectangular tubes are formed by joining the tube halves*;
- a jacket surrounding the bundle (sheet metal by disclosure) with a coolant inlet and outlet, *wherein the sheet metal jacket is attached*; and
- connections being attached to the jacket (by disclosure), *wherein a connection facilitating the gas flow is attached*.

The specific method step of "welding ends of said rectangular tubes to said latticed tube bottoms" in claim 22 is met by the secondary reference of Kim. As noted above, Kim discloses

providing preformed lattice tube bottoms 2 and welding tubes 1 therein for the purpose of providing a strong fluid tight manifold. Further, Kim discloses a tube and shell heat exchanger inherently having connections attached to the tube bottom, jacket, or both.

The specific method step of "directly attaching the lugs" in claim 22 and "the lugs are welded" in claim 31 are met by the secondary reference of Brzezinski or Scala. As noted above, Brzezinski or Scala discloses welding lugs for the purpose of minimizing material and weight of the heat exchanger.

The rejection under 35 USC 103 is believed correct for lack of any specific arguments with respect to the applied prior art. As noted above with respect to the obvious double patenting rejection, the structure in the device of the combination of Karbach et al, Kim and Brzezinski or Scala is believed assembled in same general method steps as in the instant claimed invention. The secondary reference of Kim teaches the specific welding step of the tubes to the latticed bottom. The secondary reference of Brzezinski or Scala teaches the directly attaching the lugs, specifically welding of the lugs to the inner surface of the tubes as in claim 31.

The Examiner understands applicants' intent to define the method of manufacturing claims over the prior art product. However, the general method steps are believed met by the primary reference of the Damsohn et al or Karbach et al. In the instances of specific method steps, the secondary references of Kim, Brzezinski and Scala are believed to teach welding the various structures.

Art Unit: 3753

Conclusion

Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648. Status of the application may also be obtained from the Internet: <http://pair.uspto.gov/cgi-bin/final/home.pl>

Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.



LEONARD R. LEO
PRIMARY EXAMINER
ART UNIT 3753

July 11, 2004